

AMENDMENTS TO THE CLAIMS

The following list of claims replaces all previous versions, and listings, of claims in this application.

1. (Currently Amended) A process for the manufacture of multi-layered tablet dosage of an antihyperglycemic pharmaceutical compositions for once a day administration, the process comprising:

a) preparing a first granule formulation comprising at least one non-biodegradable inert polymer and a biguanide or a pharmaceutically acceptable salt thereof of particle size less than 100 microns to achieve pH independent prolonged in-vitro release of biguanide or pharmaceutical acceptable salts thereof, wherein the non-biodegradable inert polymer is present in an amount of at least 35% by weight of ~~the~~ biguanide in the dosage form;

b) preparing a second granule formulation comprising active pharmaceutical ingredient (API) or APIs or a pharmaceutical acceptable salt thereof for immediate release selected from the group of thiazolidinediones, sulfonyl ureas, alpha-glucosidase inhibitor, aldose reductase inhibitor, statins compound, squalene synthesis inhibitor, fibrates, angiotensin converting enzymes inhibitor, LDL catabolism enhancers;

c) treating the first and second granule formulations with lubricants; and

d) compressing the first and second granule formulations to form the multi-layered tablet dosage of the antihyperglycemic pharmaceutical composition, the multi-layered tablet dosage containing layers of the first and second granules formulations.

2. (Previously Presented) The process of claim 1, wherein the biguanide is Metformin, Buformin, Phenformin or a pharmaceutical acceptable salt thereof and the thiazolidinedione is Pioglitazone, Rosiglitazone, Troglitazone or a pharmaceutically acceptable salt thereof or a mixture thereof.

3. (Previously Presented) A process as claimed in claim 1, wherein the non-biodegradable inert polymer is selected from the group consisting of cellulose derivatives, (meth)

acrylic acid co-polymers, xanthan gum, guar gum, alginates and pharmaceutical acceptable salt thereof and mixtures thereof.

4. (Currently Amended) A pharmaceutical composition in multilayer tablet dosage form for once a day administration comprising at least two layers wherein,

i. type I layer comprises at least one non-biodegradable inert polymer and a biguanide or a pharmaceutically acceptable salt thereof of particle size less than 100 microns for pH independent prolonged in-vitro release of biguanide or pharmaceutical acceptable salts thereof, wherein the non-biodegradable inert polymer is present in an amount of at least 35% by weight of ~~the~~ biguanide in the dosage form;

ii. another layer for immediate release of active pharmaceutical ingredient (API) or APIs or pharmaceutical acceptable salts thereof selected from the group of thiazolidinediones, sulfonyl ureas, biguanide, alpha-glucosidase inhibitor, aldose reductase inhibitor, statins compound, squalene synthesis inhibitor, fibrates, angiotensin converting enzymes inhibitor, LDL catabolism enhancers and mixtures thereof.

5. (Previously Presented) A composition as claimed in claim 4, wherein the biguanide is Metformin, Buformin, Phenformin or a pharmaceutical acceptable salt thereof and the thiazolidinedione is Pioglitazone, Rosiglitazone, Troglitazone or a pharmaceutically acceptable salt thereof and mixtures thereof.

6. (Previously Presented) A composition as claimed in claim 4, wherein the non-biodegradable inert polymer is selected from the group consisting of cellulose derivatives, (meth)acrylic acid co-polymers, xanthan gum, guar gum, alginates and pharmaceutical acceptable salts thereof and mixtures thereof.

7. (Currently Amended) A composition as claimed in claim 4, wherein the another layer comprises Pioglitazone ~~HCl~~ hydrochloride of particle size less than 30 microns, and the another layer further comprises at least one excipient selected from fillers, disintegrants and binder.

8. (Previously Presented) A composition as claimed in claim 6, wherein the cellulose derivatives is selected from alkylcellulose, hydroxyalkylcellulose, carboxyalkylcellulose preferably methylcellulose, ethylcellulose, hydroxyethylcellulose,

hydroxypropylmethylcellulose, methylhydroxyethylcellulose, hydroxymethylcellulose, hydroxypropylcellulose, carboxymethylcellulose, sodium carboxymethylcellulose and calcium carboxymethylcellulose.

9. (Previously Presented) A composition as claimed in claim 4, wherein the non-biodegradable inert polymer is selected from (i) a mixture of hydroxypropylmethylcellulose and hydroxypropylcellulose; (ii) a mixture of hydroxypropylmethylcellulose and hydroxyethylcellulose; (iii) a mixture of hydroxypropylmethylcellulose and sodium carboxymethylcellulose; (iv) a mixture of hydroxypropylmethylcellulose and sodium alginate; (iv) a mixture of hydroxypropylmethylcellulose and Xanthan gum; and (vi) a mixture of hydroxypropylmethylcellulose and guar gum; in a ratio ranging from 1:0.01 to 1:3.5 and is present in an amount of at least 35% by weight of the biguanide.

10. (Previously Presented) A composition as claimed in claim 4, wherein the non-biodegradable inert polymer is selected from (i) a mixture of hydroxypropylmethylcellulose, sodium carboxymethylcellulose and methacrylic acid copolymer, and (ii) hydroxypropylmethylcellulose, sodium alginate and methacrylic acid copolymer, at a ratio of 1:0.01:0.1 to 1:3.5:0.5 respectively and is present in an amount of at least 35% by weight of the biguanide.

11. (Previously Presented) A composition as claimed in claim 6, wherein the nominal viscosity at 20° C. of a 2% w/w aqueous solution of hydroxypropylmethylcellulose used is not less than 3000 cP, the nominal viscosity of a 1% w/w aqueous solution of sodium alginate at 20° C. is not less than 50 cP and the nominal viscosity of a 1% w/w aqueous dispersion of guar gum is not less than 2000 cP.

12. (Previously Presented) A composition as claimed in claim 6, the nominal viscosity at 25° C. of a 1% w/w aqueous solution of hydroxypropylcellulose is not less than 1500 cP; hydroxyethylcellulose is not less than 1500 cP; sodium carboxymethylcellulose is not less than 1500 cP and xanthan gum is not less than 1200 cP.

13. (Previously Presented) A composition as claimed in claim 7, wherein disintegrants are selected from the group comprising starch, sodium starch glycollate, crosscarmellose sodium, crospovidone, pregelatinized starch, microcrystalline cellulose and hydroxypropylcellulose.

14. (Previously Presented) A composition as claimed in claim 4, wherein the pH independent prolonged in-vitro release of biguanide from the type I layer at the end of 1, 4 and 8 hours lies in the range of 25-45% w/w, 50-80% w/w and not less than 75% w/w respectively and the in-vitro release of API or APIs or pharmaceutical acceptable salts thereof from the immediate release layer at the end of 30 minutes is not less than 80% w/w.

15. (Currently Amended) A composition as claimed in claim 4, wherein the type I layer comprises Metformin ~~HCl~~ hydrochloride in the range of 500-2000 mg and another layer comprises Pioglitazone ~~HCl~~ hydrochloride equivalent to Pioglitazone in the range of 15-60 mg.

16. (Currently Amended) A composition as claimed in claim 4, wherein the type I prolonged release layer comprises Metformin ~~HCl~~ hydrochloride in an amount of at least 48% w/w of that layer and another immediate release layer comprises Pioglitazone ~~HCl~~ hydrochloride in an amount from 5% to 30% w/w of that layer.

17. (Currently Amended) A pharmaceutical dosage form of type I granules as claimed in claim 4, exhibiting pH independent prolonged in-vitro release of Metformin ~~HCl~~ hydrochloride, wherein the dosage form comprises at least 48% w/w of Metformin ~~HCl~~ hydrochloride of particle size less than 100 microns and at least one polymer selected from alkylcellulose, hydroxyalkylcellulose and carboxyalkylcellulose or pharmaceutical acceptable salts thereof, (meth)acrylic acid copolymers, xanthan gum, guar gum, alginates or pharmaceutically acceptable salts thereof, the polymer(s) being present in an amount of at least 35% by weight of Metformin ~~HCl~~ hydrochloride in the dosage form.

18. (Currently Amended) A process for the preparation of pharmaceutical dosage form of first granules as claimed in claim 1, wherein

iii. Metformin ~~HCl~~ hydrochloride is blended with at least one non-biodegradable inert polymer selected from alkylcellulose, hydroxyalkylcellulose and carboxyalkylcellulose or pharmaceutical acceptable salts thereof, (meth)acrylic acid copolymers, xanthan gum, guar gum, alginates or pharmaceutically acceptable salts thereof to obtain Metformin ~~HCl~~ hydrochloride--polymer blend, the polymer(s) being present in an amount of at least 35% by weight of Metformin ~~HCl~~ hydrochloride in the dosage form and Metformin ~~HCl~~ hydrochloride being present in an amount of at least 48% by weight of dosage form;

iv. the Metformin ~~HCl~~ hydrochloride-polymer blend is wet granulated using water or hydroalcoholic solution optionally containing binder and plasticizer;

v. the granulated mass is dried, sized, lubricated and compressed.

19. (Currently Amended) A method of treating diabetes in a mammal in need thereof, which comprises administering a pharmaceutical composition in multilayer dosage form comprising at least two layers wherein,

vi. type I layer comprises at least one non-biodegradable inert polymer and a biguanide or a pharmaceutically acceptable salt thereof of particle size less than 100 microns for pH independent prolonged in-vitro release of biguanide or pharmaceutical acceptable salts thereof, wherein the non-biodegradable inert polymer is present in an amount of at least 35% by weight of the biguanide in the dosage form;

vii. another layer for immediate release of active pharmaceutical ingredient (API) or APIs or pharmaceutical acceptable salts thereof selected from the group of thiazolidinediones, sulfonyl ureas, biguanide, alpha--glucosidase inhibitor, aldose reductase inhibitor, statins compound, squalene synthesis inhibitor, fibrates, angiotensin converting enzymes inhibitor, LDL catabolism enhancers and mixtures thereof.

20. (Currently Amended) A method as claimed in claim 19, wherein the type I layer comprises Metformin ~~HCl~~ hydrochloride and another layer comprises Pioglitazone, Rosiglitazone, Troglitazone or a pharmaceutical acceptable salt thereof.